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EXAMINER	
WANG, TED M	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/826,399	SAYEED, ZULFIQUAR	
	Examiner	Art Unit	
	Ted M Wang	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-17* is/are allowed.

6)☒ Claim(s) *1-4,6 and 9* is/are rejected.

7)☒ Claim(s) *5,7 and 8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Earls et al. (US 6,532,358).

- With regard claim 1, Earls et al. discloses a communication system with a method for adjusting the gain of an IF amplifier, said method comprising the step of:

  monitoring (Fig.1 elements 26, 28, and 30, and column 3 lines 17-37) a gain adjustment of an RF amplifier (Fig.1 element 14 and column 3 lines 1-42) in said communication receiver (Fig.1 element 10); and

  adjusting said IF gain value (Fig.1 element 22 and column 3 lines 1-42) based on said monitored RF amplifier gain adjustment (Fig.1 elements 14, 22, 26, 28, and 30, Fig.3, and column 3 line 17 – column 4 line 4) by an amount approximately opposite to said RF gain value (Fig.1 elements 24 and 30 and column 3 line 1 – column 4 line 4).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earls et al. (US 6,532,358) in view of Okamoto (US 6,614,855).

- With regard claim 2, Earls et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching that communication receiver is an OFDM communication receiver.

  However, Okamoto teaches that a receiver for receiving broadcasting signals with an OFDM communication receiver (Fig.2 elements 11-11, 17-20, 29, and 32) that has the same structure as that of Earls et al. disclosed.

  It is desirable to have a communication receiver with an OFDM communication scheme since it is well known in the art that the advantage of an OFDM communication system is to make more efficiently use of bandwidth by permitting the transmission of many system with less interference comparing to those of the TDM/QPSK communication systems. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method taught by Okamoto in which, having an OFDM communication receiver in

system, into Earls' communication system so as to make more efficiently use of bandwidth by permitting the transmission of many system with less interference.

- With regard claim 4, et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching adjusting said IF gain value based on at least one signal energy measurement performed before (or after) a fast Fourier transform (FFT) stage in said receiver in order to maintain a desired set point.

  However, Okamoto teaches that adjusting said IF gain value (Fig.2 element SSG) based on at least one signal energy measurement (Fig.2 element 29 and (column 6 lines 40-50) performed before (or after) a fast Fourier transform (FFT) stage in said receiver (Fig.2 element 20) in order to maintain a desired set point (Fig.2 elements SSG and 29, column 3 line 66 – column 4 line 9, column 6 lines 40-57, and column 10 element 33-42).

  It is desirable to adjust said IF gain value based on at least one signal energy measurement performed before (or after) a fast Fourier transform (FFT) stage in said receiver in order to maintain a desired set point so as to improve the signal to noise ratio (SNR) and eliminate the system operated in a saturation state. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Okamoto in which, adjusting said IF gain value based on at least one signal energy measurement performed before (or after) a fast Fourier transform (FFT) stage in said receiver in order to maintain a desired set point, into Earls' receiver so as to

improve the signal to noise ratio (SNR) and eliminate the system operated in a saturation state.

- In regard claim 6, Earls et al. further discloses the step of adjusting said IF gain value in stepped increments (Fig.3 and column 3 lines 53-64) if a difference between said signal energy measurement and a corresponding pre-FFT threshold are within a predefined tolerance (Fig.3 and column 3 line 38 – column 4 line 5).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Earls et al. (US 6,532,358) in view of Marchok et al. (US 5,790,514).

- With regard claim 2, Earls et al. discloses all of the subject matter as described in the above paragraph except for specifically teaching that communication receiver is a DMT communication receiver.

  However, Marchok et al. teaches that a receiver for receiving broadcasting signals with a DMT communication receiver (Fig.7).

  It is desirable to have a communication receiver with a DMT communication scheme since it is well known in the art that the advantage of a DMT communication system is to make more efficiently use of bandwidth by permitting the transmission of many system with less interference comparing to those of the TDM/QPSK communication systems. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method taught by Marchok et al. in which, having a DMT communication receiver in system, into Earls' communication system so as to make more

efficiently use of bandwidth by permitting the transmission of many system with less interference.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Earls et al. (US 6,532,358) and Okamoto (US 6,614,855) as applied to claim 4 above, and further in view of Baldwin et al. (US 6,735,422).

- With regard claim 9, Earls et al. and Okamoto discloses all of the subject matter as described in the above paragraph except for specifically teaching that a threshold for said signal energy measurement is established to prevent clipping. However, Baldwin et al. teaches that a threshold (Fig. 4 elements 201 and 297 and column 17 lines 56-67) for said signal energy measurement is established to prevent clipping (column 20 lines 54-67).

  It is desirable that a threshold for said signal energy measurement is established to prevent clipping in order to compensate the ADC gain and prevent the clipping caused by the overpower of the ADC (column 20 lines 54-67). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the method as taught by Baldwin et al. in which, a threshold for said signal energy measurement is established to prevent clipping, into Earls et al. and Okamotos' AGC circuit so as to prevent the clipping caused by the overpower of the ADC.

Allowable Subject Matter

7. Claims 5, 7, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 10-17 are allowed.

9. The following is an examiner's statement of reasons for allowance.

- The prior art fails to teach an apparatus of Claims 10-17 that specifically comprises the following:

-- The instant application is deemed to be directed to a non-obvious improvement over the invention patented in Pat. No. US 6,532,358, US 6,614,855, and US 6,735,422. The improvement comprises that

-- monitoring signal energy measurements before and after a fast Fourier transform (FFT) stage; and

-- adjusting said IF gain value by an amount based on said signal energy measurements before and after said FFT stage and said corresponding thresholds, in order to prevent clipping caused by the ADC stage.

Conclusion

10. Reference US 6,388,526 is cited because they are put pertinent to the communication receiver with RF and IF AGC. However, none of references teach detailed connection as recited in claim.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang
Examiner
Art Unit 2634

Ted M. Wang

SHUWANG LIU
PRIMARY EXAMINER